

CLAIMS

1. A method of making an oxide film, the method comprising:
immersing an object into an electrolyte, the object
5 being made of magnesium or a magnesium alloy; and
forming an oxide film on the object in the electrolyte
by anodizing;
wherein the electrolyte comprises insoluble particles
and alkali metal hydroxide, the oxide film taking in the
10 insoluble particles as growing on the object.
2. The method according to claim 1, wherein the insoluble
particles are made of at least one of alumina, aluminum
hydroxide, silica, titanium oxide, and ceramic oxide.
- 15 3. The method according to claim 1, wherein the insoluble
particles have an average diameter in a range of 5nm~10 μ m.
4. The method according to claim 1, wherein the insoluble
20 particles have an average diameter in a range of 5nm~500nm.
5. The method according to claim 1, wherein the anodizing is
performed by application of an alternating current having a
current density in a range of 2A/dm²~5A/dm².
- 25 6. The method according to claim 1, wherein the alternating
current has a frequency in a range of 40Hz~80Hz.

7. The method according to claim 1, wherein the electrolyte for performing the anodizing is kept at a temperature in a range of 15°C~60°C.

5 8. The method according to claim 1, wherein the alkali metal hydroxide in the electrolyte has a concentration in a range of 25g/dm³~75g/dm³.

9. The method according to claim 1, wherein the electrolyte
10 comprises an aqueous solution of a soluble silicate or oxyacid salt.

10. The method according to claim 9, wherein the soluble silicate in the electrolyte has a concentration in a range
15 of 100g/dm³~250g/dm³.

11. The method according to claim 9, wherein the oxyacid salt in the electrolyte has a concentration in a range of 75g/dm³~150g/dm³.

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12. The method according to claim 1, further comprising a step of forming a coating layer on the oxide film, the coating layer being made of at least one of an organic material, an inorganic material, and a metal oxide sol.

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13. A housing comprising:

a housing body made of a magnesium material; and
an oxide film formed on the body;

wherein the oxide film contains particles made of at least one of alumina, aluminum hydroxide, silica, titanium oxide, and ceramic oxide, the particles being taken into the oxide film when the film is caused to grow on the body by
5 anodizing.